VOL. 9 NO. 4

Economics and Business

BULLETIN

JUNE, 1957

TEMPLE UNIVERSITY
SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION

TABLE OF CONTENTS

The 1956 Elections: Retrospect and Prospect ..... Page 3

WILLIAM J. McKENNA

Attitude Survey Methodology in Industrial Relations ..... Page 11

JAMES H. MULLEN

Creative Thinking: Practical Techniques and Evaluation Methods ..... Page 30

CLAIR JAMES REILLY

Philadelphia Business Index ..... Page 35

ROBERT T. KLINE

Index to Volume IX ..... Page 36

JUNE, 1957

ECONOMICS AND BUSINESS BULLETIN

OF THE

SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION

Published by the
BUREAU OF ECONOMIC AND BUSINESS RESEARCH
JOHN F. ADAMS, Director

Committee for Economic and Business Research

HARRY A. COCHRAN, Dean
JOHN F. ADAMS
W. ROY BUCKWALTER
MYRON S. HEIDINGSFIELD
IRWIN S. HOFFER
RUSSELL H. MACK

THE Bureau of Economic and Business Research of the Temple University School of Business and Public Administration was organized to provide a vehicle for stimulating and coordinating analytical studies. Its primary objectives include (1) service to the alumni as well as to the faculty and students of the University by bringing to their attention pertinent developments in the world of business, and (2) service to business and government by making contributions to the solution of specific problems. To this end, the Bureau both carries on specialized research and publishes quarterly the **Economics and Business Bulletin**, containing some of the significant results of its current studies.

The reader's appraisal of the **Bulletin** and comments upon it are solicited. The Bureau also will appreciate receiving suggestions and requests for particular studies.

The opinions and views expressed in the articles contained in this **Bulletin** are those of the writers and cannot be construed as the official opinions or policies of the School of Business.

The 1956 Elections: Retrospect and Prospect

by WILLIAM J. McKENNA*

This article provides an analysis of the 1956 Presidential election by state groupings and an analysis of the Congressional vote in close districts. An appraisal is also made of the possible outcomes of the 1958 Congressional and Senatorial elections.

NOVEMBER 6, 1956, ended one of the most unusual presidential campaigns in the history of the United States. The Democratic presidential nominee, Adlai Stevenson, had been opposed during the nominating convention by that shrewd politician, ex-President Truman, as a man who "could not win." However, Adlai Stevenson was regarded by many as a new type of presidential candidate—an intellectual, a man of the highest principles, and a man with vision and foresight. These same people regarded Senator Estes Kefauver of Tennessee, the nominee for Vice President, as a practical politician, a man close to the farmer and to the grass roots. This Stevenson-Kefauver ticket was heralded as the strongest possible for the Democrats.

Opposed to Stevenson and Kefauver was the same combination as for 1952—Eisenhower and Nixon. The campaign was conducted on a rather high level for the most part. The personalities of President Eisenhower and Vice President Nixon dominated the campaign. Seldom has a presidential candidate been subject to less personal attack or abuse, and rarely has a vice presidential candidate been the target for so much.

Nevertheless on November 6, 1956, the re-election of Eisenhower and Nixon was overwhelming. The Republican ticket received a plurality of more than 9.6 million popular votes and 457 electoral votes.[1] In the last century only Franklin D. Roosevelt had received a greater majority of popular votes and/or a greater number of electoral votes. (See Table 1).

Yet, despite the overwhelming victory of the Eisenhower-Nixon ticket, the Republican party failed to carry either house of Congress. The Democrats won the Senate by 49 to 47 and the House of Representatives by 234 to 201.[2] This was the most extraordinary result of the presidential election. Only in 1848[3] had the successful party in a presidential campaign failed to carry at least one house of Congress. But the 1848 election of Zackary Taylor can hardly be considered a precedent. Candidate Taylor, a Whig, won the election because the Democratic party had split. The regular Democrats nominated Lewis Cass as their candidate, while Martin Van Buren was the candidate of the dissident Democratic organization, the Free Soil Party. The combined votes of Cass and Van Buren exceeded the total of Taylor by 151.7 thousand.[4]

It would have been unusual for the successful party in a presidential campaign to lose even one house of Con-

---

*William J. McKenna is an Assistant Professor of Economics in the Temple University School of Business and Public Administration.

[1]The total official vote for all parties was 62,027,040. The total Republican vote was 35,581,003 (58.0 percent of two-party vote) and the total Democratic vote was 25,738,765 (42.0 percent of two-party vote). Other votes were received by six minor parties (See: **Statistics of the Presidential and Congressional Elections of November 6, 1956,** Official, Ralph R. Roberts, Clerk of House of Representatives, U. S. Government Printing Office, Washington, D. C., March 21, 1957). The Democratic presidential ticket also received the entire vote of the Liberal Party of New York (292,557).

[2]This represented a net gain of two seats in the House of Representatives and a retention of exactly the same majority in the Senate.

[3]The Congressional election in 1848 consisted of 112 Democrats and 109 Whigs in the House of Representatives and 35 Democrats and 25 Whigs in the Senate.

[4]In the 1848 election Taylor received 1.4 million votes and Cass 1.2 million votes, and Van Buren 291.3 thousand. This was a total of 1.6 million for Cass and Van Buren.

gress—let alone both.[5] The great strength shown by the Democratic party in local elections was one of the most striking features of the 1956 presidential election.

ANALYSIS OF VOTE BY STATES

An analysis of the 1956 presidential vote by states reveals an interesting phenomenon. In 1956 the Republican ticket increased its percentage of the major party vote from 55.4 percent to 58.0 percent; yet, despite this increase, the Republican ticket suffered a decrease in its popular vote percentage in 17 states. (See Table 2.) Most of these 17 states were in the West and Far West and reflected the effect of the farm and the public power issues. It was in these states that Senator Kefauver conducted his most active campaign, and, moreover, these were states in which the local Democratic party was most effectively organized.

When the vote of the various states is broken down according to the big states, the agricultural states, the southern states and the industrial states, an interesting pattern is indicated.

THE BIG FOUR

These states include California, Illinois, Pennsylvania and New York. Among these, only in California did the Republican ticket secure a smaller percentage of the popular vote in 1956 than in 1952 (55.5 percent compared with 56.9 percent). New York gave the Republican ticket the greatest increase, 61.1 percent compared with 56.0 percent (See Table 3). The national Republican ticket ran ahead of the local ticket in each of these four states.[6]

INDUSTRIAL STATES

It is not intended by this classification to exclude the "big-four" states from the industrial group. Rather, it is intended to consider separately the four politically strategic states of Ohio, Michigan, New Jersey, and Massachusetts, all largely industrial in character and subject to much the same influences. It was expected that the spotty unemployment existing in Michigan would adversely affect the Republican chances. The good Republican reception in New Jersey was unexpected in view of the great political strength of Governor Meyner who had been elected in 1953 by a majority over 160.0 thousand votes. In Ohio the tremendous political popularity of Governor Lausche,[7] the Democratic candidate for United States Senator, was expected to aid the whole Democratic ticket. In Massachusetts the hope existed that a Democratic trend would assure a close contest. None of these hopes materialized. Only in Michigan did the Eisenhower-Nixon ticket fail to improve its percentage of the Democratic-Republican vote over 1952. In each of the other three states in this category the Republican majority increased substantially. In fact, the 11.6 percent increase which New Jersey gave to the Republican ticket was one of the greatest gains reported in any state in the nation. (See Table 3.)

AGRICULTURAL AREAS

The Republican party experienced its greatest decline in voting strength in the agricultural states. The fact that the Republican party did not suffer even greater losses is a tribute to the great political force of the Eisenhower personality and to the improving agricultural situation in these areas. In seven of these nine agricultural states the Republican party's strength in 1956 declined from that recorded in 1952. The

[5] In 1876, Hayes failed to carry the House of Representatives. The Democrats had 153 seats to 140 for the Republicans. Again, in 1916, Wilson lost the House of Representatives, 210 to 216, but sufficient independents voted with the Democratic Party to give them the privilege of organizing the House of Representatives.

[6] For example: President Eisenhower ran ahead of Senator Javitz (New York) by 627.9 thousand votes; Senator Duff (Pennsylvania) by 335.7 votes; Senator Kuchel (California) by 134.8 thousand votes; and Senator Dirksen (Illinois) by 316.0 thousand votes.

[7] In Ohio, George Bender received approximately 602.0 thousand less votes than did the Eisenhower-Nixon ticket. This was a tribute to the great vote-getting ability of Mr. Lausche.

loss of strength was only 0.9 of a percentage point in Missouri but was 10.9 percentage points in South Dakota, and 9.3 percentage points in North Dakota. Only in Wisconsin and Indiana did the Eisenhower-Nixon ticket secure a gain over 1952. (See Table 3.)

SOUTHERN STATES

Notable gains were made by the Eisenhower-Nixon ticket in the traditional Democratic South. Only two of the thirteen Southern states failed to give this ticket an increased percentage of the popular vote. The Republican decline in South Carolina was the result of the failure of the Democratic leadership to pursue the same anti-Stevenson policy followed in 1952 under the leadership of James Byrnes. The pro-civil rights policy of the Republican party was an important factor in losing support in the deeply Democratic state of Mississippi. The upsurge in the strength of the Republican presidential ticket in the eleven other Southern states was a product of division in the Democratic forces within those states, the increased vote of the Negroes, and the changing economic and social characters of those states. While this trend toward the Republican party is important, it does not indicate a permanent shift, for the Republican party made little progress in local offices. Only in Louisiana was the strength of the Eisenhower-Nixon ticket regarded as a major upset (See Table 3). This state went Republican for the first time in national elections since the disputed Hayes-Tilden election of 1876.[8]

STATES WITH LOSS OF REPUBLICAN STRENGTH

There were seventeen states in which the Eisenhower-Nixon ticket secured a smaller percentage of the Republican-Democratic vote in 1956 than in 1952. California alone, among the big states, gave the Republican ticket a smaller percentage; and this occurred even with a Californian on the ticket. It may give some evidence of the controversial nature of the Nixon candidacy in California.[9] The loss of strength of the Republican ticket in Mississippi and in South Carolina has already been noted above as has the percentage loss in seven of the nine agricultural states. Losses were also suffered by the national Republican ticket in the far Western and Mid-Western states of Oregon, Washington, Wyoming, Idaho, Montana, and Nevada (See Tables 2 and 3.) The weakness of the national Republican ticket in these latter states was essentially the result of the force of the power issue, internal political conflicts, and other local factors.[10]

SUMMARY OF STATE VOTES

A summary of the thirty states included in the categories of the "big four," the agricultural, the Southern, and the industrial states is presented in Table 4. These thirty states accounted for 29,800,567 of the 35,581,003 votes received by the Eisenhower-Nixon ticket in 1956. Inasmuch as the Republican ticket showed a percentage increase in only twenty of these thirty states, the total percentage of the Republican vote for 1956 was somewhat below that of 1952—83.8 percent in 1956 compared with 86.2 percent in 1952. However, the notable increase in most of the remaining twenty states in this group of thirty was an important offset to the decline in the remaining ten states.

ANALYSIS OF CONGRESSIONAL VOTE

The most surprising aspect of the 1956 presidential election was the failure of the Republican party, despite the victory of the national ticket, to win control of at least one house of Congress. Most political writers and commentators had

[8] In the Hayes-Tilden election of 1876, Louisiana, one of the disputed electoral states, was awarded to Hayes by the special Electoral Commission established by Congress.

[9] However, Estes Kefauver, the Democratic coandidate for Vice President failed to carry his home state of Tennessee. This reflected the dispute within Tennessee between the Democratic organization and Senator Kefauver.

[10] Democratic senators were elected in Oregon, Washington, and Colorado despite the victory of the Eisenhower-Nixon ticket.

TABLE 1

POPULAR MAJORITY AND PERCENTAGE OF POPULAR AND ELECTORAL COLLEGE VOTE IN PRESIDENTIAL ELECTIONS 1920-1956

Year	President Elected	Percent of Major Party Vote	Popular Majority (2 Party Vote)	Electoral Vote Total	Percent
1920	Harding	63.9	7,004,487	404	76.1
1924	Coolidge	65.2[1]	7,339,508[1]	382	72.0
1928	Hoover	58.8	6,274,838	444	83.6
1932	F.D.Roosevelt	59.1	7,060,016	472	88.9
1936	"	62.5	10,072,016	523	98.5
1940	"	55.0	4,939,711	449	84.6
1944	"	53.8	3,596,220	432	81.4
1948	Truman	52.3	2,136,525[2]	303	57.6
1952	Eisenhower	55.4	6,622,260	442	83.5
1956	"	58.0	9,842,236	457	86.1

Source: U. S. Department of Commerce, Historical Statistics of the U.S., 1789-1945, Washington, D.C., 1948-1952; U. S. Department of Commerce, Statistical Abstracts, 1956, computed; all percentages and majorities, computed.

[1] In 1924 the Progressive candidate, Robert La Follette, received 4,822,856 popular votes and 13 Electoral College votes.

[2] In 1948 the Progressive candidate, Henry Wallace, received 1,156,103 votes, and the States Rights candidate, J. Strom Thurmond, received 1,169,021 votes and 39 Electoral College votes.

TABLE 2

PERCENTAGE OF MAJOR PARTY VOTE, AND DIFFERENCE IN REPUBLICAN PERCENTAGE 1956 OVER 1952 IN PRESIDENTIAL ELECTIONS FOR SELECTED STATES

State	Republican Percentage Two-Party Vote 1952	1956	Difference
California	56.9	55.5	- 1.4
Colorado	60.7	60.0	- 0.7
Idaho	65.5	61.1	- 4.4
Iowa	64.2	59.2	- 5.0
Kansas	69.3	65.6	- 3.7
Minnesota	55.6	53.7	- 1.9
Mississippi	39.6	28.0	-11.6
Missouri	50.8	49.89	- 0.91
Montana	59.7	57.2	- 2.5
Nebraska	69.2	66.9	- 2.3
Nevada	61.4	57.9	- 3.5
North Dakota	71.4	62.1	- 9.3

Table 2 - continued

State	Republican Percentage Two-Party Vote 1952	1956	Difference
Oregon	60.9	55.2	- 5.7
South Carolina	49.3	36.0	-13.3
South Dakota	69.3	58.4	-10.9
Washington	54.9	54.3	- 0.5
Wyoming	62.8	60.0	- 2.8

Source: 1952, U. S. News and World Report, October 19, 1956, p. 59; 1956, computed, Roberts, Ralph R., Statistics of the Presidential-Congressional Elections of November 6, 1956, Official, U. S. Government Printing Office, Washington, D. C., March 21, 1957.

TABLE 3

PERCENTAGE OF MAJOR PARTY VOTE, AND DIFFERENCE IN REPUBLICAN PERCENTAGE 1956 OVER 1952 IN PRESIDENTIAL ELECTIONS FOR SELECTED CLASSES OF STATES, BY STATES

State	Republican Percentage Two-Party Vote 1952	1956	Difference
Major States			
California	56.9	55.5	- 1.4
Illinois	55.0	59.6	+ 3.6
Pennsylvania	53.0	56.6	+ 3.6
New York	56.0	61.1[1]	+ 5.1
Industrial States			
Massachusetts	54.4	59.5	+ 5.1
Michigan	55.8	55.8	0.0
New Jersey	57.5	69.1	+11.6
Ohio	56.8	61.1	+ 4.3
Agricultural States			
Indiana	58.6	60.0	+ 1.4
Iowa	64.2	59.3	- 4.9
Kansas	69.3	65.6	- 3.7
Minnesota	55.6	53.7	- 1.9
Missouri	50.8	49.9	- 0.9
Nebraska	69.2	65.2	- 4.0
North Dakota	71.4	61.8	- 9.6
South Dakota	69.3	59.0	-10.3
Wisconsin	61.2	61.9	+ 0.7
Southern States			
Alabama	35.2	43.2	+ 8.0
Arkansas	43.9	46.6	+ 2.9
Florida	55.0	56.8	+ 1.8
Georgia	30.3	33.4	+ 3.1
Kentucky	49.96	54.7	+ 4.74
Louisiana	47.1	57.3	+10.2
Mississippi	39.6	29.5	-10.1

Table 3 - continued

State	Republican Percentage Two-Party Vote 1952	1956	Difference
North Carolina	46.1	49.3	+ 3.2
Oklahoma	54.6	55.1	+ 0.5
South Carolina	49.3	36.0	-13.3
Tennessee	50.1	50.3	+ 0.2
Texas	35.2	55.6	+ 2.4
Virginia	56.5	59.1	+ 2.6

Source: Ibid.

[1] Liberal Party vote for Stevenson of 292,577 included.

TABLE 4

TOTAL REGULAR VOTE, AND PERCENTAGE OF POPULAR VOTE, CLASSIFIED STATES, PRESIDENTIAL ELECTIONS, 1952 AND 1956

Classification	Number of States	1952 Total Republican Popular Vote Total	Percent
Major States	4	11,723,241	34.6
Industrial States	4	6,317,858	18.6
Agricultural States	9	6,081,023	17.6
Southern States	13	5,117,617	15.1
Total	30	29,239,739	86.16
Total 48 States		33,937,252	

Classification	Number of States	1956 Total Republican Popular Vote Total	Percent
Major States	4	12,576,587	35.3
Industrial States	4	6,976,396	19.6
Agricultural States	9	5,773,764	16.3
Southern States	13	4,843,820	13.3
Total	30	29,800,567	83.8
Total 48 States		35,581,003	

Source: Ibid.

TABLE 5

PERCENTAGE OF MAJOR PARTY CONGRESSIONAL VOTE, 1956 CONGRESSIONAL ELECTIONS, SELECTED STATES

State	Congressional District	1956 Congressional Election Republican Percent	Democratic Percent
Colorado	3	50.06	
Delaware	At Large	51.9	
Illinois	3	52.0	
Iowa	2	51.4	
	4	50.7	
	5	51.1	
	6		50.08
Indiana	8		50.13
Kansas	5		50.5
	6	51.1	
Michigan	6	50.6	
Minnesota	3		52.0
Missouri	2	51.3	
	6		51.9
	7		50.8
	11		50.5
Montana	2		50.9
Nebraska	3		50.1
New Jersey	6	51.0	
New York	17	51.0	
Oregon	2		50.5
	4		51.3
Pennsylvania	6	51.5	
	25		51.3
Washington	4	50.3	
Wisconsin	9		51.4

Source: Computed from data in 1957 BULLETIN ALMANAC, The Philadelphia Evening and Sunday Bulletin, Philadelphia, 1957.

TABLE 6

NUMBER OF SENATE AND HOUSE SEATS LOST BY THE PRESIDENT'S PARTY IN MID-TERM CONGRESSIONAL ELECTIONS, 1870-1954[1]

Year	Losses of Congressional Seats in Mid-Term Elections: Senate Republican	Senate Democratic	House of Representatives Republican	House of Representatives Democratic
1870	-4		-45	
1874	-4		-85	
1878	-6		-10	
1882	+1		-29	
1886		+3		-14
1890	+8		-78	
1894		-5		-113
1898	+6		-19	
1902	+3		-11[2]	
1906	+3		-28	
1910	-9		-58	
1914[3]		-4		-61
1918		-8		-26
1922	-7		-78	
1926	-7		-10	
1930	-8		-50	
1934		+10		+9
1938		-6		-71
1942		-9		-45
1946		-12		-55
1950		-5		-28
1954	-1[4]		-18	

Source: U. S. Department of Commerce, Historical Statistics of the U.S., 1789-1945, Washington, D. C., 1949, Table Series p. 50-56, p. 293; Gallup's Political Almanac, 1952, p. 60, 65; and, New York Times, November 4, 1954.

[1] Comparisons are with the Congressional seat totals of the preceding presidential elections, third parties excluded.
[2] Democratic Party increased its total seats by 27. Thus, both parties gained as a result of the Reapportionment Act of 1901.
[3] After 1913 all U. S. Senators were elected by popular vote by virtue of the 17th Amendment.
[4] Senator Wayne Morse of Oregon was elected as a Republican in 1950. Therefore, for purposes of comparison, he was counted as a Republican. He voted for a Democratic organization of the Senate in January, 1955 and was reelected on the Democratic ticket in 1956.

TABLE 7

NUMBER OF HOUSE OF REPRESENTATIVE SEATS FROM CONGRESSIONAL DISTRICTS WON BY 55 PERCENT OR LESS OF THE MAJOR PARTY VOTE, 1956 CONGRESSIONAL ELECTION

State	House Seats Won by 55 Percent or Less in 1956: Congressional Districts Republican	Congressional Districts Democratic	Number of Seats Republican	Number of Seats Democratic
California	6, 7	11, 29	2	2
Colorado	3		1	
Connecticut	1		1	
Delaware	At large		1	
Illinois	3, 23	12, 21, 25	2	3
Indiana	3, 9	8	2	1
Iowa	2, 4, 5	6	3	1
Kansas	1, 2, 6	5	3	1
Maine	1	2	1	1
Maryland	6		1	1
Massachusetts	10	8	1	1
Michigan	6, 7	17	2	1
Minnesota		3, 9		2
Missouri	2	4, 6, 7, 11	1	4
Montana		2		1
Nebraska	2	3	1	1
Nevada		At large		1
North Carolina		9		1
New Jersey	4, 6, 11		3	
New York	17		1	
Ohio		6		1
Oregon		2, 4		2
Pennsylvania	6, 19	5, 11, 25	2	
South Dakota		1		1
Virginia		9		1
Washington	4		1	
West Virginia	1, 4	2	2	1
Wisconsin		9		1
Total			31	30

Source: 1957 BULLETIN ALMANAC, op. cit.

TABLE 8

PERCENTAGE OF MAJOR PARTY VOTE, 1952 UNITED STATES SENATE ELECTIONS, SELECTED STATES

State	Percentages Republican	Percentages Democratic	State	Percentages Republican	Percentages Democratic
Arizona	51.3		New Jersey	56.0	
California	87.7[1]		New Mexico		51.1
Connecticut	54.2		New York	55.2	
Delaware	54.5		North Dakota	74.0	
Florida		100.0	Ohio	54.6	
Indiana	52.8		Pennsylvania	51.8	
Maine	62.7		Rhode Island		54.8
Maryland	52.5		Tennessee		78.0
Massachusetts		51.5	Texas		75.2
Michigan	50.8		Utah	54.3	
Minnesota	57.1		Vermont	72.3	
Mississippi		100.0	Virginia		73.4[1]
Missouri		54.0	Washington		56.4
Montana		51.1	West Virginia	54.1	
Nebraska	60.9		Wisconsin	54.3	
Nevada	51.7		Wyoming	51.6	

Source: America Votes, The Macmillan Company, New York, 1956.
[1] Percentage is of total vote.

expected a much closer Republican presidential victory. They were also almost unanimous in the opinion that the Republican party would lose the House of Representatives, and that the Senate would be close. But most of these political writers and commentators had predicated their conclusions upon the assumption that the Eisenhower-Nixon ticket would receive a smaller percentage of the total popular vote than in 1952. The consensus was that if the national Republican ticket substantially increased its popular majority, it would carry both houses of Congress.[11]

In the contest for seats in the House of Representatives, the Republican party gained ten seats[12] but lost twelve.[13] This represented a net gain of two seats for the Democrats in the House of Representatives.

The gains and losses in the Senate were even more unusual. The Republicans gained two closely contested seats in Kentucky, one in West Virginia, and one in New York. Surprise losses of Senate seats occurred in Idaho and Colorado.[14]. Senator Duff was defeated by ex-Mayor Clark of Philadelphia by approximately 17,000 votes despite a margin of 600,000 for the Eisenhower-Nixon ticket.[15] Few would have predicted a Democratic Senate with two Republican senatorial victories in Kentucky, and one in traditionally Democratic West Virginia; but of such is the unpredictable nature of politics.[16]

Many of the victories in the 1956 Congressional races were very close for both the Democratic and Republican candidates. These close elections are shown in Table 4. In thirteen Congressional Districts the Republican candidates' margins of victory were two percent or less.[17] There were also thirteen Congressional districts in which the Democratic margins of victory were two percent or less.[18] These twenty-six Congressional districts are truly marginal.

OUTLOOK FOR 1958

House of Representatives. Rarely does the party which controls the presidency gain seats in the House of Representatives in a mid-term election. The principal exception to this rule of politics was the 1934 Congressional elections in which the Democratic party gained nine House seats. The usual loss of seats by the incumbent party is rather heavy (See Table 5.)

The margin of victory in a Congressional district can be used as a measure of vulnerability. In this sense, the Republican party is more vulnerable in 1958 than the Democratic party. In the 1956 Congressional elections the Republican party won 31 House seats by a margin of five percent or less, the Democrats, 30. (See Table 6.)

In view of the 1956 Congressional elec-

---

[11]An example of this viewpoint was the article, "The Fight for Congress" by Charles B. Seib in the **Harpers Magazine,** October, 1956.

[12]Republican seats in the House of Representatives were gained in the following states: Connecticut, 1; Delaware, 1; Illinois, 1; Michigan, 1; New Jersey, 3; Pennsylvania, 1; and West Virginia, 2.

[13]Democratic seats in the House of Representatives were gained in the following states: California, 2; Iowa, 1; Kansas, 1; Maine, 1 in September; Missouri, 1; Montana, 1; Nebraska, 1; Nevada, 1; Oregon, 2; and South Dakota, 1.

[14]The victory of the Democrat Travis Church by over 47,000 votes in Idaho was a real surprise. Senator Welker had been a long-term incumbent, and he had expected to win readily if the Eisenhower-Nixon ticket won a substantial victory. The defeat of Republican Dan Thornton by less than 3,000 votes in Colorado was also a surprise in view of the 131,000 majority of the Eisenhower-Nixon ticket. Colorado also elected a Democratic Governor by over 17,000 votes.

[15]Clark's victory was an overwhelming 170,000 majority in his native Philadelphia. Clark even outran Adlai Stevenson in Philadelphia by 45,000 votes.

[16]The division of the Senate in the 85th Congress was the same as the 84th—that is, 49 Democrats and 47 Republicans. The April 2, 1956, Senatorial election in Texas was easily won by the Democrat Yarborough despite the large number of other Democratic candidates seeking the office.

The real division of the House of Represensatives in the 85th Congress was 234 Democrats to 201 Republicans—a gain of two over that of the 84th Congress.

[17]Most of the twelve Congressional seats lost to the Democratic party in 1956 were safely Republican in 1954 and in 1952 (that is, margin of over five percent).

[18]Most of the ten Democratic Congressional Districts lost to the Republicans were marginal districts in 1952 and 1954 (that is, were won by a margin of less than five percent).

tions, it would appear that the best the Republicans can hope for is to gain several marginal seats. It would be a most unusual occurrence if the Republican party were to win majorities of either the thirty marginal Republican seats or of the nineteen marginal Democratic seats. It seems possible that the Republicans may regain several of the traditionally Republican seats lost in the 1956 elections, and that they might win a few of the close Democratic seats; but this would not appear to be sufficient to give them control of the 86th Congress. Indeed, the Democratic party may well increase its total of House seats above the present 234.

United States Senate. The outlook for the Republican party in the 1958 Senatorial election is bleak indeed. The present Democratic majority of two in the Senate ordinarily might not be too difficult a barrier to overcome in a mid-term election. The Republican party has increased its Senate membership in five mid-term elections since 1870, while the Democrats have done so in only two.[19]

But the nature of the 1958 elections for the United States Senate places the Republican party at a distinct disadvantage. There will be only eleven Democratic Senators whose terms will expire. The Republicans, however, will have twenty-one Senators whose terms will expire. Five of the eleven Senatorial elections will be in states which are regarded as absolutely safe and where the Democratic margin of victory was overwhelming in 1952 (Florida, Mississippi, Tennessee, Texas, and Virginia). In three of the remaining six Democratic states, victory appears fairly safe (Missouri, Rhode Island and Washington). In only three of the eleven Democratic states to have Senatorial elections in 1958 was the 1952 margin of victory below 52 percent (New Mexico, Massachusetts, and Montana), and therefore narrow enough to be classified as marginal (See Table 7). Yet 1952 was a presidential election year; and if the trend that has often been evident in these states during mid-term elections should materialize in 1958, in these three states the Democrats could increase their majority.[20]

A survey of the 1952 Senatorial election results in the twenty states which elected a Republican senator emphasize the difficult situation which will confront the Republican party in 1958. Only four of these twenty-one Republican Senate seats appear to be safe (Maine, Nebraska, North Dakota, and Vermont). California appears less safe even though Senator Knowland secured 87 percent of the vote in 1952. This is because of Senator Knowland's announcement that he would not be a candidate for re-election in 1958.[21] Minnesota appears reasonably safe for the Republican party only to the extent that the incumbent Senator Thye won by 57.1 percent in 1952. Yet Senator Humphrey's victory by 57.2 percent in 1954 shows how a shift to the Democratic party can occur.

In 1952, twelve[22] of the twenty-one Republican senators won their seats by less than 55 percent of the vote, some by a percentage considerably below 55 percent. In each of these states the Republican candidate will be more vulnerable in 1958 than he was in the presidential year of 1952. Republican senators from New York and New Jersey

[19]See Table 6. The 1880 election gave the Republicans 38 seats and the Democrats 36. There were two Senators from other parties. This election gave the Republicans control of the Senate. The 1890, 1898, 1902, 1906 elections increased the Republican majority in the Senate. The three seats gained by the Democrats in 1886 did not give them control of the Senate. The 1934 gain of ten seats increased the Democratic majority in the Senate.

[20]For example, in the 1954 Senatorial elections in New Mexico, the Democratic candidate received 57.3 percent of the vote.

[21]However, Senator Knowland may run for Governor in California in 1958. This might have an important bearing upon the Senatorial election. Senator Knowland is popular in California, and he could well aid the Republican candidate for the Senate.

[22]These states are: Arizona, Connecticut, Delaware, Indiana, Maryland, Michigan, Nevada, Ohio, Pennsylvania, Utah, Wisconsin, and Wyoming. (See Table 8.)

In the special election held in West Virginia in 1956 to complete the unfilled term of the late Senator Neely, Chapman Revercant (Republican) won by 54.1 percent of the vote. He is vulnerable in 1958.

are less vulnerable than in the above twelve states in the 1958 elections, but local factors, not yet evident, may affect these elections.

Thus, the over-all prospects for the Republicans in the Senatorial elections of 1958 do not now appear very sanguine. It seems evident to the writer that the Democratic party may well increase its present total of 49 to 56 or 58. The mathematics of this election are "stacked" against the Republican party. This is particularly true when it is considered that the 1958 mid-term election will occur during the second term of the present Republican administration, and there is a tendency for the party in power to lose a greater number of Senate seats in the second mid-term election than in the first term.

SUMMARY AND CONCLUSIONS

In retrospect, the 1956 presidential elections were unusual in these ways:

1. The Republicans increased their over-all percentage of victory over 1952;
2. The Republican party lost ground in 17 states—the agricultural area, the Far West and two Southern states;
3. The Republican party made its greatest gain in the populous and industrial states;
4. The victorious party (Republican) for the first time since 1848 lost both Houses of Congress.

With this background the present prospects for 1958 Congressional elections may be summarized as follows:

1. The Republican party probably will not regain control of the Senate. In fact, the Democratic party could win enough seats to increase its margin;
2. The Republican party probably will not regain control of the House of Representatives, but there is a possibility that it may gain a few seats over 1956 if the agricultural areas return to their traditional Republicanism and the party holds its gains in the East. Even this does not appear to be a hopeful prospect for the Republicans at the present time.[23]

[23]The 1957 Michigan local elections, and the 1957 Texas United States Senatorial election may be a straw in the wind. The Democrats won handily in both of these elections. Any pent-up dissatisfactions with the national Republican party may be reflected in Democratic strength on the local level. The recent death of Senator Joseph R. McCarthy of Wisconsin will not change the number of Senators up for re-election in 1958. The difference in the personalities in Wisconsin will afford an interesting political campaign in that state in 1958, and it places Wisconsin in the marginal class.

Attitude Survey Methodology in Industrial Relations

by JAMES H. MULLEN*

This article is the second of two dealing with attitude surveys. Its purpose is to describe and appraise the principal methods of conducting surveys currently used in industry and social research. It also deals with a number of methodological problems common to all opinion-gathering techniques, including questionnaire construction, sampling, administration, research design, analysis and interpretation of results. The first article, which appeared in the March, 1957, Economics and Business Bulletin, developed the history and background of this approach to opinion interchange and communication.

THE attitude survey, arising as it did from a spontaneous demand for information about the thinking of people in varied situations, was used in an empirical way for many years by journalists and other practitioners. Methodology received scant attention, however. In the last two decades several factors have contributed to an increased awareness of the importance of methodology. One of the most important of these was the failure of a number of widely published opinion polls to make accurate determinations of the climate of public opinion. Perhaps the most spectacular of these failures was that of the Literary Digest Poll which, based on incorrect sampling methods, predicted an overwhelming victory for the Republican presidential candidate, Alfred Landon, in 1936. Another factor which has contributed to the development of more precise techniques of attitude measurement has been the adoption and extensive use of the attitude survey technique by psychologists, sociologists, and other social scientists, as a means of obtaining information about social phenomena. In their efforts to obtain deeper and more meaningful perceptions of the dimensions of human attitudes and beliefs, they have developed a series of significant refinements of earlier survey techniques. Although this continuing trend has brought about a growing body of practices based upon the development of theory and methodology, important differences of opinion still exist among practitioners.

*James H. Mullen is an assistant professor of Management in the School of Business and Public Administration. He is actively engaged as a consultant in the field of Industrial Relations and has conducted a number of attitude surveys for industry.

AN APPRAISAL OF THE PRINCIPAL METHODS

In the preceding article in this series (March 1957), the term **attitude survey** was defined and the principal methods of surveying were described. It was noted that the attitude survey is conducted predominantly by means of verbal techniques, although some attempts have been made to elicit attitude responses by nonverbal techniques such as projective interpretations of human actions. It was pointed out that the three principal forms of verbal survey are the personal interview, the written questionnaire, and the attitude scale. A distinction was also made between the systematically or rationally constructed **attitude scale** and the more simple, single question opinion poll. Finally, the attitude survey, as it is characteristically used in the field of industrial relations, was evaluated in terms of the above analysis. It was concluded that the industrial relations survey lay somewhere between the rational **attitude scale** and the **single question poll**, possessing some of the characteristics of both. Like the single question poll, the questions included in the survey are selected on an arbitrary rather than a systematic or rational basis. Unlike the single question opinion poll, however, most attitude surveys in this field contain a number of questions which may be designed to gauge the nature of a

single phase or many phases of human relationships. Unlike attitude testing in certain other fields, that used in industrial relations usually attempts to ascertain attitudes toward a number of different practices and areas rather than toward a single concept.

A considerable controversy has arisen between the proponents of the attitude scale and those who would use more simply constructed oral or written questionnaires. Both methods for ascertaining attitudes have advantages and limitations, which prompts some discussion at this juncture. A more meaningful analysis of the pros and cons of both methods can be made, however, after some explanation of their nature.

The scalar technique of attitude questionnaire construction has been used by psychologists for the past 25 years. It represents an attempt to improve on the validity of earlier questionnaire techniques, particularly that of the single question opinion poll. While attitude scales vary in method of construction and presentation, they have certain common characteristics. Essentially, the scaling technique requires that the participant indicate an expression of agreement or disagreement, approval or disapproval, with respect to a series of statements which confront him on the questionnaire.

The statements on the attitude scale have been carefully selected and standardized in an effort to present a continuity of opinion or attitude from extreme favorableness to extreme unfavorableness. Thus, the acceptance of some and the rejection of others tend to indicate the degree to which the individual's attitude toward the subject in question is favorable or unfavorable. These scales usually include from ten to thirty statements which have been selected from a much larger number. The selection is based on the opinions of a number of qualified individuals who read each statement carefully and place it in one of ten or eleven piles according to their judgment as to the favorableness or unfavorableness of the statement. The position assigned to each statement is recorded for each individual and the total array of positions is examined to determine how consistently an item is placed in a given pile. If there is little or no agreement between the judges as to the proper position of the statement, that is, if the item has been assigned with equal frequency to a large number of different piles, then it is discarded as being too ambiguous. If, however, it has been assigned consistently to the same pile or to piles near each other in the continuum, then it may be presumed with safety to be a fairly clear expression of a certain degree of favorableness or unfavorableness of attitude toward a given subject. The median or mean position assigned to an item by the various judges determines the numerical value of the item. The average of the values for each of the items selected by the respondent determines the numerical value of his attitude toward the subject.

The method described above was first developed about 1930 and published by L. L. Thurstone and his associates. Important additions and variations were contributed to the scalar method by E. S. Bogardus, R. Likert, and L. Guttman, all of which bear their authors' names. All of these methods, however, are essentially similar in their approach to the problem of measuring attitude, and all utilize some rational or objective technique for determining the degree of favorableness or unfavorableness of the statements included in the scale.

The advantages claimed for the scalar method of construction stem from the improvement which it represents over the single question opinion poll. The scalar method is believed to yield a higher degree of accuracy and reliability than the single question technique. The presumption is that the consistency of results will be increased if ambiguity is minimized, that is, the same question will convey more nearly the same concept to large numbers of respondents and hence

will yield more consistent reactions from individuals with the same or similar attitudes. The device referred to above for obtaining consistent or reliable results and avoiding the inclusion of ambiguous statements or questions, **factor or item analysis,** is used in connection with the Thurstone Scale and with other similar types. Since the questions chosen for inclusion in the single question poll are determined arbitrarily or subjectively by one or a relatively small number of persons, avoidance of ambiguity depends almost exclusively on the common sense and personal experience of the person or persons designing the scale.

Another claim of the proponents of the scalar method is that it minimizes the problem of bias due to the form of the question and answer. The attitude is determined by the selections of the respondent from a continuum of statements which include all degrees of favorableness and unfavorableness. The single question poll, in contrast, relies on the development of questions which are neutral in their phraseology as a means of preventing the respondent from being led to a particular answer. While the intention of those constructing the poll may be above reproach, it is often difficult to prevent a "leading" quality from creeping into questions through inadvertence.

Another problem of attitude measurement is that of unidimensionality, that is, the measure of one attitude as contrasted with different attitudes held by different people. A statement such as, "the Federal Government should have the right to require compulsory arbitration of all labor disputes involving the public welfare," for example, might elicit agreement or disagreement from the respondent based on his attitude toward the centralization of power in government, the institution of collective bargaining, the effectiveness of third party intervention, or the necessity of eliminating labor disturbances. Thus this question, used by itself in an opinion poll would not guarantee the measurement of an attitude toward a single social question, but might elicit responses by different persons to entirely different social issues. In order to assure that only one subject area is being measured, it would be necessary to include a considerable number of additional questions which would not reflect the multiple attitudes or beliefs covered by this question.

While the degree of unidimensionality cannot be established with perfect precision for the attitude scale technique, there are methods which may be used to determine with some degree of reliability the presence or absence of this quality in the Thurstone and Likert scales and in others of similar construction. In the case of the single question opinion poll and other attitude surveys which do not utilize systematic bases for the selection of questions or the determination of scale values for the component questions, no methods are available for systematically testing the unidimensionality of the questionnaire.

The case of the attitude scale technique has been ably stated by Professor Quinn McNemar in his comprehensive survey and review of opinion-attitude methodology.[1] He summarizes his conclusions in these words:

> We have no hesitancy in making our second proposal, namely, **that single question opinion gauging be discarded in favor of opinion measurement by attitude scales.** By using scales, a satisfactory degree of reliability (accuracy) can be obtained. By factorial analysis or preferably by the Guttman scaling method, unidimensionality can be guaranteed. There is evidence that scaling automatically takes care of the intensity factor. Validity would have to be established, but this is no more difficult for scales than for single questions; and with a higher reliability, the validity is more meaningful when a single dimension is involved. The whole weariness problem of bias due to question and answer form nearly vanishes . . . . .
>
> There are additional advantages to measuring opinions by scales. By their use the social scientist is less apt to

[1] Quinn McNemar, "Opinion-Attitude Methodology," **Psychological Bulletin,** Volume 43, No. 4, July, 1946, p. 327.

be misled or to mislead others with percentages. He has a more accurate instrument for classifying people into categories. He can, for example, segregate the upper or lower 30 percent with some assurance that the included individuals have been fairly reliably placed therein; by breakdowns on other variables he can make as meaningful analyses as are possible with the single yes-no question; he can use the distributed scores in his analytical work and thereby be able to express the closeness of relationships in an exact manner; and predictions can be more easily made from scaled questions.

Few persons who are familiar with attitude and opinion research methodology will care to dispute the obvious superiority of the attitude scale to that of the single question poll when it comes to precision of measurement. There are, however, other considerations which seem to militate against the use of the attitude scale technique. For example, there are practical limitations of time which would minimize the usefulness of a large battery of questions, all aimed at the measurement of a single attitude or opinion. When one sets about to measure attitude on the effectiveness of programs and policies which are of some complexity, or where one is interested in obtaining opinion on a number of political, social, or economic uses, it is necessary to determine the individual's attitude on a considerable number of different subjects. To do this with the scalar technique, it would be necessary to use an equally large number of attitude scales. Since this is usually impossible for a number of practical reasons, particularly the time element and the cost involved, the only alternative is to narrow the scope of one's inquiry considerably. As Messrs. Krech and Crutchfield[2] observe in their review of this problem:

> One cannot afford the luxury of obtaining high reliability of a single measure at the cost of not obtaining other essential data from the individual. Without such varied data from each respondent, correlational analysis is impossible, and the meaningfulness of a single measure becomes dubious.

Another practical limitation of the scalar method is that it yields only one value indicating the degree of favor or disfavor of the respondent toward a particular issue. In the case of a scale used to measure employee attitude, for example, it only permits the measure of the degree of satisfaction or dissatisfaction which the employee exhibits toward the company. It does not identify the various causal factors or conditions which determine the level of the employee's morale. It has limited value, therefore, to the company management which desires to take steps to remedy and change specific policies, practices, programs, or personnel which may be required.

Another very practical problem confronting organizations which desire to utilize a standardized attitude scale for a survey of their own personnel is that of adapting the scale to fit their individual needs and interests. Changes in words, the substitution of one statement for another or the addition of new statements cannot be made without destroying the internal balance of the attitude scale. Unless additional factorial analysis is undertaken for a modified scale, the internal consistency of the scale can no longer be presumed to exist. This means, in effect, that the attitude scale cannot be adapted or modified without losing its principal advantages of reliability and precision. The alternatives are using the attitude scale as it is or incurring considerable expense in developing a new scale or series of scales specifically designed for the use of the individual organization. In most instances, the latter procedure appears to be too costly. Standard attitude scales are available commercially and have been used by a number of organizations. For the most part, the generalized nature of these scales limits their usefulness to little more than the broad dimension of attitude or morale within the organization.

---

[2]David Krech and Richard S. Crutchfield, **Theory and Problems of Social Psychology**, New York McGraw-Hill Book Company, 1948, p. 275.

It does not permit the organization to inquire about the opinions of the individual or specific programs or policies.

By way of summarizing the case for the opinion poll type of questionnaire, Professor Leo P. Crespi has written a rejoinder to the McNemar paper which appears in a later issue of the **Psychological Bulletin:**

> McNemar confesses to no hesitance in making the proposal that *single question opinion gauging be discarded in favor of opinion measurement by attitude scales.* Such a stand cannot fail to impress most students of polling, even those most critical of its present weaknesses, as throwing out the baby with the bath. The additional thought will occur to some that such an action is not so much an oversight as great affection for another infant. McNemar endeavors to forestall the obvious rejoinder to his position with the following statement:
>
> If it is objected that a given problem does not justify the extra work entailed in scale construction and the added schedule — administration time, there is reason to suspect that the problem isn't of much value from a rigorous scientific viewpoint.
>
> Much that is questionable can hide behind this persuasive sounding claim. McNemar's unhesitating suggestion would seem to imply that the bulk of AIPO, Fortune, and NORC material is of little value. Taken together with his repeated insistence upon the utmost rigor in investigation, McNemar's position reveals a definite misconception. He makes the perfectionist's error, possibly an occupational disease with methodologists, of singletrackedly seeking to maximize precision in scientific experiments. Is not the proper function instead to maximize results per unit of effort? It is easily possible that the increase in information to be obtained with the substitution of expensive laborious scales for the single question is relatively small and is far out-weighed by the increase in effort. . . . .
>
> McNemar's emphasis upon methodological and statistical refinement would seem to excommunicate a whole new area of modern statistical development which is concerned with the fashioning of relatively imprecise statistics which are, however, of remarkable efficiency in terms of the information obtainable per unit cost in time and money. Whatever may be the inclination of the methodologist, the concrete researcher knows well that his yardstick of success in experimentation must be efficiency—the results per unit of cost. Over preoccupation with refinement can be just as sterile in science as in social life.[3]

Depth Interviewing

Comparisons are often made by those concerned with opinion-attitude measurement as to the relative merits of the opinion poll question and depth interview questioning technique. The proponents of the depth interview method correctly point to the superiority of depth interviewing in detecting misunderstandings of the meaning or intent of the question. As the responses elicited by the initial question begin to pour forth, there is usually ample opportunity for the interviewer to perceive from the nature of the answers, whether or not the question has been correctly understood and interpreted. If not, the interviewer will have the opportunity to clarify the concept with additional questions or explanations. Depth interviewing also enables the interviewer to form opinions concerning such factors as **intensity, saliency, specificity, precision,** and **sincerity** of the answers. Neither the attitude scale nor the single question poll type survey provides such opportunity for ascertaining such qualitative factors. For these and other reasons, the depth interviewing technique is considered to be superior to the various "paper and pencil" methods and to the single question as used in personal interviews.

The limitations of the depth interviewing method, however, are considerable, and have acted as major deterrents to its use in the majority of industrial relations' situations and in testing public opinion. The most important practical limitations are those associated with its relatively great expenditure of time and money. The usual depth interview is, itself, a fairly time-consuming affair

[3]Leo P. Crespi, "Opinion-Attitude Methodology and the Polls—A Rejoinder," **Psychological Bulletin,** Volume 43, No. 6, November, 1946, p. 566.

requiring at least an hour. This means that unless a large number of trained interviewers are available, the process will cover a considerable period of time and probably will preclude the polling of all of the group being studied. This introduces problems of sampling and gives rise to the other limitations which are inherent in any fractional study. There are also the problems of obtaining and training competent interviewers. The validity of the findings are in large measure dependent upon the quality of interviewing and interpretive analysis on the part of those conducting the interview. Needless to say, competent interviewers are difficult to find and represent a very significant factor in the cost of such a survey. Limitations of time and space also increase the difficulties involved in conducting such studies over a wide geographical area. Thus, regional or national studies are severely handicapped in most cases if the personal interviewing technique is to be used.

The above and other limitations, including possible interviewer bias, have militated against the use of the depth interview technique in most situations in industry. A growing number of companies, however, are utilizing this technique in conjunction with written questionnaires on a subsample of those covered by the former method. They have been used also as a pretesting technique to check the applicability and comprehensibility of questions, and as a post-survey technique for checking the validity of findings.

It appears, then, that from the standpoint of cost, convenience, versatility, and ease of subject area coverage, the single question poll technique holds a decided advantage over the attitude scale and the depth interview method. Its most serious limitations, those relating to its validity and reliability due mainly to ambiguity and multiple question interpretation, are minimized or, at least, mitigated when the poll type question is used with a series of other questions which deal with similar or related areas and when the group being surveyed is fairly homogeneous and reasonably well-acquainted with the subject areas of the survey.

This is not to imply that high validity and reliability can be assured simply by adding more questions dealing with dissimilar or different topics. On the other hand, a questionnaire which contained six or seven questions dealing with various phases of an employee's relationship to his foreman would give a more valid and reliable picture of that employee's general attitude toward his foreman than a questionnaire which contained only one question dealing with this topic. Finally, precise measurement of employee attitudes is not essential for management's purposes. Rough approximations will indicate the areas in need of attention.

PROBLEMS OF QUESTIONNAIRE CONSTRUCTION

Although a number of problems of attitude survey construction, administration, and interpretation are common to all types of survey techniques, primary reference in the following discussion will be made to those associated with the multiple-question, written questionnaire which is used most frequently in the field of industrial relations at the present time.

One of the first questions to be considered in constructing an attitude survey questionnaire is that of general research design. Unfortunately, the question of survey or research design is often completely overlooked with the consequence that the summaries are simply countings of a series of unrelated questions and topics. Professor Katz, in a paper given before the Industrial Research Association in 1949 presented the issue with unmistakable clarity:[4]

> On the technical side, the most common practice in surveys is a lack of

[4]Daniel Katz, "Good and Bad Practices in Attitude Surveys in Industrial Relations, Measurement of Employee Attitudes," **Proceedings of Annual Meeting,** Industrial Relations Research Association, New York City, 1949, p. 212.

research design even when basic theoretical concepts are not being investigated. Apart from the significance of the theory under investigation, surveys can be considered from the point of view of the methodologist in relation to the adequacy of the research design. The fact of the matter is that the empiricism of market research has so affected the survey field that it is all too common practice to find industrial surveys with almost complete lack of research design. . . . .There is little systematic attempt to seek relationships so that repeated studies will build up a field of knowledge.

To take a simple example, if we make a study of the attitude of foremen, we should so design the survey that we can begin to get answers about some of the factors related to the differences in the management-identification of foremen. One suggestive study has related foremen philosophy to the length of time on the job and has demonstrated that the longer the foreman has been in his role of management representative, the more he takes over management values. . . . . By survey design, then, is meant the attempt to establish a relationship between two factors. A good survey procedure calls for design even if the problem under investigation is at the applied level.

The possibilities for factor correlation of some kind are, of course, endless, and limitations of cost and time prevent any survey from utilizing too many of them. As Professor Katz has cautioned, however, it is essential that some thought be given to this problem before launching a survey if the probability of producing a set of data which are ambiguous or meaningless is to be avoided. It would seem to be essential for the survey designers to consider this problem carefully in light of the purposes and objectives of the survey.

The choice of control questions would, of necessity, be based on experience and a priori knowledge of the probable causal elements at work in the environment or area being studied. Since, in all probability, limitations of time and budget would preclude the use of a great number of control questions, the subjective insights of the survey designers and the knowledge of the primary objectives of the study would be most important in determining those to be included and those to be discarded. In effect, therefore, the whole problem of survey design seems to rest on the principle that a much more meaningful survey can be conducted if certain research hypotheses are formulated or considered and provision is made in the design of the survey for the testing of these hypotheses. Furthermore, while a priori knowledge and human insight may lead to incorrect hypotheses or the omission of important ones, it is better to attempt to test these hypotheses than to simply collect and measure fact and opinion for which no relationships are apparent or established. As Professor Katz has noted, these principles are equally applicable to applied and theoretical research problems.

Another problem of considerable importance in constructing a questionnaire is that of determining whether questions are clearly and not ambiguously worded and whether the questions have the same meaning to everybody. Some provisions should be made to test the wording of questions prior to their use in the survey. There are two possible approaches to this problem. One seems to be the use of a fairly standardized questionnaire which has been developed and tested by a survey specialist. Presumably, the accumulated experience of the specialist has been brought to bear on the problem so that the content and phraseology of the questionnaire has been revised and refined to eliminate any ambiguous statements or questions.

When questionnaires are being initially constructed, however, some form of pretest or pilot study would seem to be advisable. Some organizations have utilized informal methods of pretesting such as asking a number of possible respondents to read and criticize the tentative questionnaires; others have used a "panel of experts" approach in which initial phraseology of questions is submitted to roundtable discussion relying on the concensus of the group as

to whether the wording, construction, and meaning of the question is readily understandable or in need of revision. It would seem, however, that the most reliable method of pretesting the survey questionnaire is through the medium of a formal pilot survey. In such a survey, the preliminary test form would be administered to a small group of respondents who would be asked to indicate questions that they had difficulty in understanding and who would probably be further questioned through personal interviews to obtain their impressions and criticisms of the questionnaire. Similar interviews may be of value in discovering areas where exploration is needed prior to drawing up the first draft of the questionnaire; in this way provision can be made for questions concerning topics and issues of importance which might otherwise have been completely overlooked. The substantial expenditures of time and money involved in an extensive pretesting or pilot study, however, particularly one utilizing depth interviewing, usually militates against its use in practical operations where money, staff, and time are limited. This is unfortunate because skillful and judicious use of pretesting techniques may result in important improvements in research design, clarity of expression, and method of presentation and analysis.

The accumulated experience of a large number of organizations in the conducting of attitude surveys both in industry, marketing, and other fields has led to wide recognition and acceptance of certain basic procedures in questionnaire construction. Although circumstances and needs in particular situations may render departure from one or more of these rules-of-thumb procedures necessary and desirable, they nonetheless constitute points of departure which must be considered in the construction of the attitude questionnaire. Some discussion of these aspects of questionnaire construction appears to be desirable in order to indicate problem areas and possible solutions.

One of the basic problems in questionnaire construction is that of the number of topics or subject areas to be covered. In recent years there seems to have been a general tendency for organizations conducting attitude surveys to increase the number of topics or subject areas covered by the industrial questionnaire. This may possibly be explained by a growing recognition on the part of management officials and others sponsoring attitude surveys of the potential contribution of the survey technique in uncovering information about important and critical issues within the organization. Those officials reason that as long as the survey is being administered and as long as the answers obtained are valuable, why not find out how the survey group feels about "such and such an issue as well as these other issues." So the questionnaires grow in their coverage.

While the desire to find out about as much as possible is understandable and laudable, there are certain very real dangers inherent in increasing the size and coverage of the questionnaire. Many organizations have attempted too ambitious and extensive a coverage of topics in surveys of their employees. As the number of topics or issues is increased, the general tendency is both to increase the number of questions in the questionnaire and decrease the number of questions dealing with a particular topic or issue. Both of these procedures are dangerous when carried to extremes. While the optimum number of questions to be included in the questionnaire will vary depending upon a number of factors such as the educational level of the group surveyed, the complexity of the subject material covered and the methods of presentation used, there would seem to be a practical limit dictated by the expenditure of time and effort required on the part of the respondent. In the case of most industrial surveys carried on by individual companies, the employees as a rule are genuinely interested in the topics being covered since their

job is a matter of major concern to them. Moreover, they are usually adequately briefed on the objectives of the study. Under these circumstances a number of companies have successfully used as many as 100 questions. In most cases, however, 50 to 75 questions seems to be a more reasonable number. The Conference Board survey reports two companies that used more than 150 questions.[5] The dangers of asking too many questions are many. The respondents lose interest and become mentally tired before they have completed the questionnaire. The probable results are that a large number of questionnaires will not be completed or that the answers to questions appearing in the later pages of the questionnaires will be superficial and unreliable, having been disposed of with increasing impatience and decreasing attention.

The other approach, that of decreasing the number of questions for each topic or area covered, can also have a detrimental effect upon the quality of the survey. Carried to the extreme, the questionnaire becomes a compilation of individual questions covering a wide number of unrelated issues. This places an increasing burden on the mental agility of the respondent. He is required to adjust his thought processes from one conceptual frame to another in rapid succession. As a consequence, the questions are less fully comprehended and hence more ambiguous, with the result that the answers are less reliable and less meaningful.

Another problem associated with that of the growth of the questionnaire is that of the costs of preparation and analysis. While preparation costs do not increase in direct proportion to the number of questions included, there is some significant increase particularly in the costs of analysis and presentation; perhaps the most important factor here is the degree of analysis undertaken and the number of intercorrelations undertaken.

Notwithstanding the limitations discussed above, individual companies seem to prefer a survey covering a relatively large number of topics rather than one concentrating on one or two. The National Industrial Conference Board report showed that of the 111 companies surveyed, 74 or 66.7 percent covered a wide variety of topics, 29 or 26.1 percent covered several but not a wide variety, and only eight or 7.25 percent covered only one or two.[6] In the case of regional or national surveys, however, the tendency seems to have been to limit surveys to a small number of topics and a correspondingly small number of questions. This might possibly be explained by the use of the personal interview technique and the weaker motivation of the casual respondent.

One of the principal areas of attention, and one to which much time and effort are directed, has to do with the phrasing of the individual questions. Again, there are in particular situations a number of considerations which will lead to significant variation in the form and complexion of the questions. Certain rules, however, have almost axiomatic application in the development of clear, interrogative expression. The following procedures are generally considered to be good practice:

1. Use simple, common words. Whenever there is any question about the level of verbal comprehension of the responding group, it seems safer to choose those words which most simply express the thoughts to be conveyed. The use of the word good, for example, is to be preferred to synonyms such as advantageous, commendable, gratifying, etc. This procedure occasionally presents a problem where vocabulary simplification causes some sacrifice in the precision of meaning. These cases should be settled on their individual merits.
2. Use words which are common to the industry or occupational group

[5] "Experience with Employee Attitude Survey," **National Industrial Conference Board Personnel Series**, No. 115, 1951.

[6] **Ibid.**, p. 15.

being surveyed. This practice is helpful in conveying more precise connotations, so long as the group is a relatively homogeneous one.

3. Avoid compound questions. Such questions as, "Does your company pay wages that compare favorably with other companies in the industry and other companies in your geographical area?" should be avoided because they are essentially two different questions. The respondent whose pay compares favorably with that paid by other companies in the geographical area but is below the average for other companies in the industry is at a loss as to how to respond to this question.
4. Use a mode of expression which is as informal as is consistent with good taste. Such expressions as "pat on the back," "take a stand" or "back you up" may be preferable to more formal expressions of those thoughts because of their familiar connotation.
5. Use brief, concise expression. The use of such phraseology as, "In your opinion, does the company delegate to you the proper amount of authority commensurate with the responsibilities which are usually encountered in the performance of your job?" should be abandoned, in favor of a more simple statement such as, "Are you given enough authority to meet the responsibilities of your job?"
6. Do not use leading questions. A question such as "Are you satisfied with the company's wage policy of paying above the average of other firms in the area?" will not lead to valid or reliable answers.

There are, in addition, other procedures which tend to increase the effectiveness of the survey technique. Common sense precautions such as allowing ample space for questions and for write-in comments, preparation of clear, legible typography, avoidance of unexplained symbols or numbers on the questionnaire form, etc., will improve the performance of the survey group and lead to more satisfactory results.

There are other aspects of questionnaire construction techniques, however, upon which there is a difference of opinion and practice. For example, practice varies considerably as to the location of key questions, that is, questions which supply the data on which breakdowns will be developed when questionnaires are analyzed. Some questionnaire experts feel that these vital statistics—age, education, marital status, length of time on the job, etc.—should be placed at the beginning of the questionnaire so that these questions which are easy to answer will form an introduction to the survey proper. It is also felt that respondents will want to know just how much personal information will be required before they answer the topical questions. Others feel, however, that the initial position of such questions will arouse undue suspicion before the respondent has had an opportunity to see what the survey contains and so should be placed at the end of the survey.

Another point at issue is whether to use yes-no questions or multiple choice responses. The advocates of the yes-no approach argue that this method makes possible a much clearer and more simple expression of the problem and does not force upon the respondent the sometimes confusing problem of determining the extent of his agreement or disagreement. The adherents of multiple choice questions stress the importance of obtaining as accurate a statement of opinion as possible. They argue that the preponderance of attitude or opinion usually lies between the two extremes of agreement and disagreement and that a dichotomy of opinion will not reveal the respondent's true attitude. Further, they argue that certain questions, such as, "Is your company fair in its treatment of its employees?" are not susceptible to a "yes" or "no" answer. These questions confuse the respondent because they force upon him an absolute choice. While this objection may be overcome in part by the use of various qualifying adjectives in the statement of the question, the results are not always entirely staisfactory. It is also noted that the yes-no method tends to obscure or hide differences between the component groups (units,

sections, etc.) comprising the larger survey groups. Many survey experts consider the measurement of these differences to be one of the meaningful products of the attitude survey technique.

There is also disagreement as to the number of multiple responses that a given question should provide. Some survey designers claim that three alternatives are sufficient—one favorable, one neutral, and one unfavorable. They argue that to use more is to force respondents into artificial distinctions in attitude which do not exist in their conscious perceptions. Other experts prefer to use four alternatives, two falling on either side of the neutral position. They maintain that there are real and significant differences in the degree of favorableness and unfavorableness of attitudes but that few, if any, persons who have become acquainted with any issue or topic remain really neutral in their attitudes. A third group maintains that a neutral response or reaction must be included along with the four alternatives which distinguish degrees of favorableness and unfavorableness. They argue that a significantly large community of opinion remains essentially neutral or undecided about certain issues and that the elimination of a neutral statement forces this group to take one side or the other of the issue. Very few attitude surveys have attempted to distinguish more than five degrees or levels of response toward a given issue. Those who believe that there is an upward bias in attitude responses sometimes advocate an unequal or asymmetrical distribution of alternatives. This arrangement distinguishes a great number of levels of favorable rather than unfavorable opinion or attitude.

Experts disagree over the inclusion of an "I don't know" or "I have no opinion" alternative. Those who would use it argue that without it all respondents are forced to take some position on every issue even though they might not be acquainted with or have an opinion or attitude about a particular subject or issue. This, they argue, generates a false impression of the clarity and saliency of attitude about a given issue and increases the unreliability of the responses. Those who argue against its inclusion claim that the "I don't know" or "I have no opinion" alternative permits an easy "out" for those people who are too lazy to use their minds. They point out that a lack of information on certain factual questions may be provided for by the inclusion of an occasional "I don't know" alternative, but that its use should be minimized because it encourages nonparticipation on the part of the respondent. They also counter that if the survey is properly designed, the questions will deal with issues and subjects which are close to the experience of the respondents and should therefore properly evoke attitudinal reactions.

Another point at issue is that of the length of the statement versus the length of the answer or response. The majority of experts seem convinced that the issue or subject is best presented as a completed or nearly complete thought in the body of the statement. This tends to make the statement longer, but permits the alternatives to be one word or a relatively small number of words. By not having to repeat the gist of the thought in each alternative response, the number of words is held to a minimum and the reading time is therefore reduced considerably. Those who argue for the longer response which contains part or all of the substance of the question maintain that repetition of the subject matter in the alternative answers tends to fix the issue more firmly in the mind of the respondent.

Another technical problem of survey construction is that of minimizing or avoiding the possibility of primacy of effect in the responses. It is a widely recognized fact that there is a tendency among those who have difficulty reading to answer a preponderance of questions by checking the first or second alternative. This tendency is also observed where respondents are not willing to

read questions carefully for other reasons. It can be minimized, or at least easily detected, by staggering the order of alternative replies to the questions. Thus, the alternative responses to question one would range from most favorable to least favorable; those to question two, from least favorable to most favorable, and so on. Some suggest that this should be in a random rather than a regular pattern so as to prevent the respondent from growing accustomed to any regular rhythm or pattern. This practice, however, introduces some additional problems in the transcription and tabulation of results, and so it is usually avoided.

While most questionnaire designers agree that some provision should be made for write-in responses, there is a considerable difference in opinion as to how and where to make provision for this in the questionnaire form. Some questionnaires provide space below each question for write-in statements; some provide it periodically throughout the questionnaire, usually at the end of a topical section or subsection; while still others prefer to provide space only at the end of the questionnaire. The practice of asking for comments after each question is believed by many to fatigue and discourage the respondent early in the questionnaire and to lengthen unduly the number of pages. On the other hand, making provisions for written comments only at the end of the questionnaire prevents the respondent from noting his reactions while individual topics are still fresh in his mind and, therefore, precludes most of the detail about specific issues. A reasonable compromise seems to be that of providing space at the end of each section or subject area.

There is also some difference of opinion over the practice of grouping questions dealing with similar or related issues or topics versus distributing them in a random order throughout the questionnaire. Advantages are claimed for both methods. Random order tends to reduce the possibility of the "halo effect" but tends to require greater mental agility on the part of the respondent who is forced to change his frame of reference with each successive question. If this exercise becomes too taxing, the respondent may lose interest in the questionnaire and become careless in his answers.

There are, of course, other questions relating to survey construction which must be dealt with in designing the format. Some of these, such as the use of declarative versus interrogative sentences seem to be largely a matter of taste; others such as the maintenance of the respondent's anonymity have become matters of almost unanimous agreement. The foregoing analysis has attempted to suggest only the more prominent aspects and problems of survey construction. It does not presume to have exhausted the list.

PROBLEMS OF SAMPLING

One of the most important aspects of survey design is that of determining the size and composition of the survey group. Another is insuring that this group is adequately polled or studied. Where the survey group is very large, it may be necessary to devise some method of sampling the statistical universe, that is, the total number of persons in the survey group. In that event, the survey designer must select a sample which will be representative of the entire group. In the field of industrial relations, the great majority of attitude surveys have been conducted within individual plants or companies, and the managements of most of the companies have usually concluded that the advantages of full employee participation more than outweigh the additional expense involved in a survey of the total group. A National Industrial Conference Board survey of over 100 companies showed that 92 percent of the companies using written questionnaires covered all their employees.[7] The costs of this

[7] Ibid., p. 17.

practice, however, increase as the number and geographical distribution of those surveyed becomes greater. While complete coverage may be within the means of most individual companies using the written questionnaire method (particularly if these surveys are relatively infrequent), this is not the case where the interview method is used or where surveys are regional or national in scope. Under these circumstances, the problem of obtaining a satisfactory or representative sample of the total universe has been a very real one.

The essence of random sampling is that every person in the statistical universe shall have an equal chance of being included in the sample. In order to fulfill this condition, it is necessary that the survey designer either, (1) have available a complete file of the names of the population he is studying so that he may select every "Nth" name, or (2) be thoroughly familiar with the characteristics or dimensions of the population so that he may construct a stratified sample of the population which will include proper representation of each of the basic characteristics of the group, such as age, sex, race, geographical residence, education, and economic status. Not all studies of economic or occupational subgroups, meet these conditions. Some regional or national surveys have used samples which were not truly representative in the statistical sense of the word. In some instances regional studies in industrial relations have included the experiences of employees in only a few of the larger companies in a particular region. Some industrial studies carried out on a national basis have frequently been nation-wide only in the sense that they have included some degree of representation from more than one economic or geographical region. On the other hand, some organizations have been conscientious in their efforts to obtain a representative sample. A poll conducted by **Fortune** in June, 1940, for example, was composed of a rather accurate cross section of workers. This poll, which surveyed American workers' attitudes toward unions, employers, strikes and other issues, included a representative cross section based on income, geographical distribution, age, sex, marital status, and other important statistical factors. In the case of attitude surveys of supervisory personnel, however, no attempts have been made to obtain such a representative survey group.

The statistical dilemma of the designer of attitude surveys in industrial relations arises in part from the scarcity of adequate statistical series for industrial and occupational subclassifications. Even were such a series existent, however, the complexity of the task and the tremendous expenditures in time, human effort, and money that are necessary to prepare truly representative samples, place such studies beyond the reach of the vast majority of individuals and private organizations. As a result, studies of this character are too often not representative of the statistical universe which they are surveying.

This problem has been recognized implicitly or explicitly at one time or another by most social scientists. Professor Katz has labeled it "the selective bias of situations" by which he means that most social research is carried on where the climate is favorable and where the material is most readily available. If social phenomena in areas in which data are difficult to obtain or the climate of opinion is antithetical to research are significantly different, then current research findings have definite limitations. In Professor Katz's own words:

> "There is one problem of sampling the individuals within a single industrial situation and another problem of a representative sample of industrial situations. The second type of problem has received little attention in the survey field. It raises many perplexing questions about the nature of the universe with which we are concerned and the dimensions according to which stratification should take place. One of the practical weaknesses thus far

has not been the selective bias of individuals but the selective bias of situations. It has been much easier to undertake surveys in those plants where relations between management and labor are harmonious. Neither union leaders nor management welcome surveys when they are deadlocked in a struggle."[8]

The problem is one which the social scientist must face if he is to improve the validity and precision of his findings.

There are other sampling problems which confront those carrying on attitude surveys in the field of industrial relations. One of these is the selective bias which is introduced into sampling and is carried out through the medium of questionnaires mailed to the respondents. Statisticians generally agree that there may be important differences between the characteristics of the group who reply to mailed questionnaires and those who do not. These differences appear to be related to the degree of individual interest and involvement that the respondent feels with respect to the topical areas about which he is being asked to express an opinion. There is a likelihood that the proportion of persons answering will be significantly greater among those who hold extreme opinions (either pro or con) than among those who reflect a more neutral and hence more disinterested climate of opinion. Unless it is possible to determine the amount of selective bias by means of some sort of supplementary field work, the resulting findings may not be representative of the entire group. Unfortunately, practical considerations often render no other procedure feasible, particularly in the case of surveys covering a broad geographical area.

Another basic sampling problem involves the selective bias introduced by individual interviewers. Where the personal interview method is used, bias may be introduced by the interviewer's own opinions, attitudes, socio-economic status, etc. A number of studies have revealed the possibility of sampling bias being introduced in quota control sampling through interviewer selectivity. Under the quota control procedure, the interviewer is directed to obtain a certain quota of interviews on such bases as sex, race, occupation, and geographical residence, but he is not directed to any specific respondent. Thus, he can introduce selective biases based on his own affinities or the pressures of work. This limitation suggests that careful consideration should be given to the selection, training, and supervision of interviewers.

Some studies have indicated that the results of personal interviews vary according to the interviewer's own opinions on the issues on which he is questioning the respondent. Those who hold one opinion tend to find a greater number of respondents who hold a similar opinion than they do those who hold an opposing opinion. Presumably they have unconsciously interpreted the respondent in the light of their own personal biases. A National Opinion Research Center poll carried on in Southern cities in 1942 found that the expressed opinions of negroes were different when they were interviewed by whites and negroes.[9] When asked, "Is it more important to concentrate on beating the Axis or to make democracy work better at home?" the white interviewers obtained a 62 percent "beat the Axis" response, while negro interviewers obtained only a 39 percent affirmative response. These and other problems are introduced with the use of the personal interview method. While the personal interview procedure may still be preferred over other survey methods because of various important advantages which it possesses, those using this medium should be made aware of these limitations so that proper precautions can be taken.

[8]Daniel Katz, "The Measurement of Intensity," in H. Cantril, **Gauging Public Opinion**, Princeton, Princeton University Press, 1944, p. 216.

[9]David Krech and Richard S. Crutchfield, **op. cit.**, pp. 290-291.

PROBLEMS OF SURVEY ADMINISTRATION

There are number of difficulties which are likely to be encountered in the administration of the written attitude survey. Some of them are related to the type of survey, the method of presentation, and the nature of the group being surveyed; but several of them are common to all such questionnaires and warrant special consideration.

One of the problem areas of survey administration is that of establishing proper **rapport.** This condition is just as necessary to the success of a written questionnaire survey as it is to a survey based on the interview, although it is perhaps not so obvious in the former case as in the latter. If we define **rapport** (as it applies to the written questionnaire situation) as a state of mind which engenders interest in the project, sympathy with its objectives, and a willingness to cooperate by answering questions accurately and thoughtfully, then the success of the survey, i.e., completeness, reliability, and validity of the findings, depend to a great extent on the attainment of this objective. The necessity for giving adequate consideration to this problem prior to the actual administration of the survey is more important when the written questionnaire is used than when the personal interview is the medium of inquiry. This stems from the fact that a properly trained interviewer is usually able to perceive when adequate **rapport** is lacking and can take steps to correct this situation by varying his approach, line of questions, or in some other way winning the confidence and cooperation of the respondent. In the case of the written questionnaire, because the administrator of the survey and respondents have limited personal contact, this is not possible. Even when a lack of **rapport** is perceived, it is difficult to correct the condition once the survey has begun and the respondents are busy answering their questionnaires. In the case of the mailed questionnaire, the opportunity is practically nonexistent.

One of the most successful ways of arousing interest and curiosity among the members of a prospective survey group is through advance publicity. A number of individual companies have apparently been quite successful in attaining this goal. While practice varies considerably, companies do utilize such methods as articles in the house organs, letters from company executives, bulletin boards, and public speaker system announcements. A number of companies have found it advisable to proceed cautiously, particularly in the case of the initial survey. It is considered good practice to carry one or two short news items dealing with the projected study in the company magazine or plant paper and then at a later date, a more complete account of the final plans. A letter from the president explaining the purposes of the survey is always in order and may be followed by publicity through other media of communications. Supervisory meetings have been found to be very helpful in gaining support and enthusiasm from the various levels of supervision. Supervisors may be asked to supplement other methods with a verbal explanation and a question-and-answer period prior to the survey presentation. The quantity and elaborateness of the introductory publicity campaign will undoubtedly depend on the number of employees to be reached, their morale, the availability of various channels of communications, previous experience with similar surveys, etc. Some presurvey publicity, however, is essential if proper **rapport** is to prevail. Within the limitations of budget and the needs of the situations, careful plans should, therefore, be drawn for acquainting the survey group with the nature and purpose of the study, the mechanics of procedure, and the value of the study to the individuals being surveyed.

Presurvey publicity may be organized so as to approach the ideal in the case of industrial attitude surveys being carried out within individual companies.

The existence of a variety of communication channels and the fact that the people employed and those to be surveyed constitute the same group make conditions very favorable for the development of adequate **rapport**. This is not usually the case with those studies covering a wider geographical and organizational area. In most cases, regional or national polls are administered with very little, or completely without, prior preparation of the survey group. Unless the members of the survey group are a part of a common organizational structure, the dissemination of pretest publicity is nearly impossible. The casual way in which respondents are chosen in many surveys precludes any presurvey preparation. Unwillingness of survey administrators to test the patience of casual respondents may also be a deterrent.

Another consideration which is related to the whole question of **rapport** is that of anonymity. Most students of public opinion agree that anonymity is essential to the success of attitude surveys. There are few who would challenge the assertion that added gains in validity of findings which accrue from assuring the anonymity of the individual respondent more than outweigh any possible advantages resulting from being able to identify the individual respondent. Most persons will agree that it is not only very important that anonymity be maintained but also that great pains should be taken to assure the members of the survey group of this condition. It cannot be taken for granted that those being surveyed will assume that their identity will be concealed in the final report. On the contrary, evidence available on this subject tends to indicate that the inherent inclination of the prospective respondent in most survey situations is one of suspicion and apprehension lest in some way his or her remarks will be identified. This bespeaks the importance of taking adequate steps to insure the confidential nature of the survey.

The problem of assuring anonymity is greater in some survey situations than in others. Wherever the survey is being administered by the employer or through the initiative of the employer, the problem is paramount. In this respect, the attitude survey carried on by the individual company is at a considerable disadvantage as compared with those initiated and administered by independent groups. Even in the latter case, however, the problem is present because the respondent can easily conceive of situations where the results could be brought to the attention of his employer.

There seem to be effective ways of assuring the respondent that his answers will remain confidential. In the case of the written questionnaire, the fact that surveys are administered to relatively large numbers in the same room at the same time is in itself an indication that identification would be difficult. Anonymity is reinforced by the fact that an objective type of question is used which requires no handwriting and that comments are optional. In the case of personal interviews, however, there is no **prima facie** case for anonymity. The latter method relies on the effectiveness of the presurvey publicity and the efforts of the individual interviewer to convince the respondent that his identity will be held inviolate. There are many survey experts who hold that the personal interview survey can never be completely effective in gaining the confidence of the respondents for this reason. While this conclusion may not be justified, it does serve to highlight the greater difficulties encountered in allaying the fear of identification when the personal interview method is used.

Another effective method of dealing with this problem is to employ the services of an independent individual, agency, or organization to conduct the survey. If the independent party is properly introduced and identified and if this person administers the survey and promises to protect the employees against identification, fears of identification are greatly reduced. There are cer-

tain procedures, which, if followed, seem to be of additional help in creating confidence. Many experts suggest that a large ballot-box type of receptacle, adequately padlocked, be placed at the front of the room and that respondents be asked to deposit their questionnaire therein. The participants are informed that the box will not be opened until it reaches the office of the agency that is conducting the poll. Another practice is to ask volunteers from the respondent group to distribute the questionnaires. Questionnaires should be free from unidentified symbols, letters, or numerals that might tend to arouse suspicions among the survey group that some secret system of identification is being used.

The degree of success which is attained in assuring the survey group that their replies will be held confidential depends upon the degree of confidence which the group places in the organization sponsoring and conducting the survey. In the case of surveys conducted by individual companies among their own employees, the company's record for fair and impartial treatment and its reputation for keeping its word will be important factors in obtaining a frank and constructive response to the attitude survey which it is conducting. Where similar attitude surveys have been conducted before, the experience of the survey group with the results—the fact that no attempt was made to identify individual respondents and the fact that concrete actions were taken as a result of the study—will serve in great part to increase the willingness of the group to cooperate and express itself frankly and fully.

Another consideration which is related to the problem of **rapport** is that of providing an adequate explanation of the procedure the respondents should follow in completing the questionnaire. In the case of the personal interview method, the mechanical aspects are handled by the interviewer; he can introduce corrective action if he finds that the respondent is not making the proper type of response. Where the written questionnaire is used, the administrator must rely on the clarity of the verbal explanations before the survey gets under way and the written explanations which are usually prominently placed at the beginning of the questionnaire. It is therefore wise to give adequate thought to this problem in designing the questionnaire and the preliminary presentation of the administrator. In this way, most of the respondent's difficulties will probably be anticipated and a considerable amount of confusion and uncertainty will be avoided. Some survey experts recommend that instructions should be printed and prominently placed on the questionnaire, that the survey administrator read the instructions aloud after distributing the survey, then, as a final guarantee, afford members of the survey group an opportunity to ask questions about the method to be followed. Despite the most careful precautions there will always be a few participants who will not follow instructions.

Closely allied to the above problem is that of obtaining uniform presentation and administration when surveys are administered to more than one group at different times. The problem is further complicated when the number of groups involved necessitates a number of persons to administer the survey. Under these circumstances, there is always the possibility of introducing factors that may influence the responses of participants.

The best insurance against this eventuality seems to be adequate instruction of those who will administer the survey. Where the survey is to be carried on through the medium of personal interviews, this problem not only involves the preliminaries of administering the survey but applies to the entire process of the interview itself. While the possibilities of bias are greater in the personal interview, this tendency, in part, is overcome by the universal awareness of its existence by those using this

method and the efforts made to minimize this limitation. The problem is not as apparent when the written questionnaire is used, and so may be more readily overlooked.

PROBLEMS OF SURVEY ANALYSIS AND INTERPRETATION

To a great extent, the process of analysis and the results of that process are determined by the earlier aspects of survey construction and administration. Mistakes which have been made in the design and administration of the study become evident in the analysis which follows, but this is too late to permit corrective action.

One of the dangers of survey analysis is that the analysts fall into the common error of carrying out routine tabulation of questions using as many breakdowns and correlations as the survey permits. Messrs. Krech and Crutchfield point out that:

> The keynote of analysis should be the *testing of hypotheses* (author's italics) which means the study of certain breakdowns and cross tabulations that have been deliberately provided for in the study design. There is nothing wrong with the exploration of new and unexpected relationships, but it should be a planful research, dictated by hunches and hypotheses and not by the mere combinatorial possibilities of a Hollerith machine. . . . . The overall percentages of answers provide little analytic significance. What is necessary is to break down the data into subclassifications so that they can be compared and correlated. In this way the psychological and sociological determinants of opinions and attitudes may be revealed.[10]

These authors also warn against the excessive use of sociological breakdowns, that is, breakdowns on the basis of sex, age, education, income, etc., or at least against the uncritical interpretation of findings based on such breakdowns. They hold that "differentiation of opinions and attitudes is not likely to take place primarily along lines of age, sex, place of residence, occupation, etc., except in special circumstances." In their opinion, the fact that these sociological breakdowns do yield differences of opinions is usually an artifact based on the reality that they are related to basic determining variables. They recommend, as do McNemar and others, the use of psychological rather than sociological breakdowns, that is, breakdowns based on political preferences, personality traits, etc. This criticism overlooks the fact that sociological breakdowns of attitude and opinion may be of significance in company surveys. It also fails to take into account the fact that meaningful psychological breakdowns usually are difficult to obtain except through rigorous questioning of the respondents.

There are certain specific aspects of the interpretation of survey findings which constitute areas in which faulty interpretation may lead to erroneous conclusions. One of the most common mistakes is to attribute statistical significance to differences in results which grow out of sampling errors. Unless adequate tests of significance are used, differences which can be attributed solely to sampling errors may be assumed to have importance.

Another problem has to do with the determination of differences that are of social or psychological significance. A difference may be obtained which is statistically significant but which may nonetheless be too small to be of any significance from a social or psychological standpoint. The researcher must be mindful of the fact that not all statistically significant differences are socially or psychologically significant.

Another common pitfall with regard to the interpretation of attitude surveys is to rely too greatly on the significance of absolute determinations of attitude or morale. The possibility of a consistent upward bias in attitude survey findings should suggest caution in hazarding too unqualified optimism about survey findings which indicate very favorable attitudes. Differences in attitudinal levels among subclassifications of the survey group are likely to yield much more valuable insights.

In connection with the differences be-

[10] Ibid., p. 302.

tween relatives and absolutes, it is worthy of note that another common type of error is frequently made. It is that of attributing too great a significance to percentages and percentage changes in data. In working with small numbers, large percentage changes and differences are readily found which are of little or no absolute significance. An increase from one unit to two units, for example, is an increase of 100 percent, but this may be of no real significance. Very closely related to this is the practice of blowing up percentages. In effect, the projection of percentage differences obtained from a relatively small sample into correspondingly high absolute figures for an entire universe may lead to unwarranted and very erroneous conclusions. McNemar notes this latter practice, reporting on one study where applied to a total population of 20 million yielding a prediction that seven million persons would so act. Considering the possible sampling error based on 400 cases, correct figures for the entire universe might have varied between six million and eight million.[11]

Another practice with which McNemar and other methodologists take issue is that of failing to give adequate description of the sampling methods used and the tests applied to determine the significance of the data. Without such information, the reader is not in a position to make an informed judgment upon the adequacy of the research methods or the validity of the findings. In the same vein, and an equally serious breach of good practice in reporting and interpreting survey findings, is that of concealing absolute results in percentage or relative figures. Findings based upon percentages which conceal the absolute figures from which they were drawn should always be viewed with suspicion.

One other practice of doubtful validity which is frequently used in the interpretation of attitude survey results is that of attributing equal significance to similar absolute results on different questions. It is a real temptation for the analyst to fall into this practice when quantitative values are assigned to different degrees of responses to different questions. If, for example, percentile quantities were computed for four or five alternative answers of each of a series of questions dealing with various phases of morale and job relations, an over-all index of morale might be obtained by taking an average of the mean or median response for each one of the questions in the series. This would be tantamount to assuming that each of the questions dealt with a phase of industrial relations which was of equal significance in determining the over-all morale of the individual, inasmuch as each question would have been given equal weight in the measurement of the individual's morale.

There are doubtless other common errors of analysis. Those that have been presented serve to illustrate the sort of pitfalls which confront the novice.

CONCLUSION

The treatment of methodological problems in this article is not intended to be exhaustive. The writer has attempted to present the problems of attitude survey methodology which experts currently writing in this field stress. This exposition has been prompted by concern for the fact that methodological considerations are germane to any research study no matter how applied or practical its orientation may be. The use of the attitude survey in industrial relations will continue to grow in the future as a result of growing awareness on the part of management, union officers and social scientists of its value in determining the climate of employee opinion and morale. The validity and precision of the results obtained from the use of this technique will depend in no little part, therefore, on the degree of familiarity of the users with its inherent methodological problems.

[11]Quinn McNemar, **op. cit.**, p. 339.

Creative Thinking: Practical Techniques and Evaluation Methods

by CLAIR JAMES REILLY*

There are several techniques which can be used to get greater output from individuals and groups. These techniques deal with the tapping of mental resources or the creativeness of every one within an organization or group. This article deals with these techniques and suggests the necessity for evaluating the results. The check list and scientific methods which help to develop a basis for judgment are also discussed.

THE creative resources of people are not being utilized to the fullest extent. Much is written about the utilization and preservation of our natural resources. The mental resources of groups and individuals are equally important. Organizations, therefore, should be aware of the ways of increasing productivity by stimulating the thought processes of their personnel. Case studies show, for example, that techniques of stimulating creativeness of individuals and groups have improved the functions of advertising, plant production, education, military planning, family relations, and other areas in which creative imagination contributes to better decision making and harmony.

GROUP IDEATION

The first and most widely quoted technique of stimulating creativity in people is generally called "brainstorming."[1] This is simply a way of idea production through group thinking which produces workable solutions to problems. Motivation, innovation, and positive stimuli are essential to stimulate creativity in terms of ideas from groups. Tests made at the University of Buffalo show that ideas produced through this uninhibited group approach are 65 percent to 93 percent more numerous than those derived from individual effort.[2] There are those, however, who think that creativity is more of an individual effort than a group process. This feeling exists especially in areas of painting, and editorial design.[3] It should be reported also that many brainstorming sessions do not seem to work due to lack of support or orientation of management.[4]

Creative Thinking and Knowledge

The advocates of creative thinking define **creativity** as an attempt to get a new idea or concept. The idea may come spontaneously, or through the formulation of the problem.

Creativity may be also considered a part of the system of logic known as the inductive and deductive processes.[5] Thoughts about creativity can be traced to the writings of Aristotle and Plato. Practical techniques of creative thinking as practiced by business and industry, however, are of recent development.

The concept and practice of creative thinking evolve from the nature of the mental powers of individuals. Knowledge and creative thinking are distinguished as follows:

1. Absorbtive Power—the ability to observe, and then to apply attention.
2. Retentive Power—the ability to

*Clair James Reilly is a member of the Marketing faculty of the Temple University School of Business and Public Administration. He is also a marketing consultant.

[1]The writer acknowledges the data sent by Mr. Alex Osborn, Chairman of the Creative Education Foundation, 1614 Rand Building, Buffalo 3, New York.

[2]Lester R. Bittel, "Better Way to Solve Plant Problems," **Factory Management and Maintenance,** May, 1956, p. 99.

[3]See "Brainstorming: Ideator or Opiate," **Printers Ink,** November 16, 1956, p. 34.

[4]B. B. Goldner, "Why Doesn't Brainstorming Always Seem to Work?" **Sales Management,** October, 1956.

[5]**Myron S. Heidingsfield,** "The Techniques of Creative Thinking," address before the Philadelphia Direct Mail Club, April, 1956.

memorize and recall.
3. Reasoning Power—the ability to analyze and to judge.
4. Creative Power—the ability to visualize, to foresee, and to generate ideas.[6]

We learn through the first two, as in school or college, and think by use of the latter two. It is reasoning and creative powers, then, that lead to techniques of solving problems through idea production.

How to Brainstorm

Brainstorming had its first application in business by Batten, Barton, Durstine and Osborne,[7] an advertising agency in New York City. This organization at present produces about ten thousand ideas a year for clients. This work is the creative result of idea conferences, originated by Willard Pleuther, Director of Creative Services. For these sessions a panel of twelve is considered the optimum size. There are five core members and a number of guests who meet every day in a conference room during the lunch hour. All panel members are oriented and are ready to talk freely. Scheduled topics may range from media selection to finding new uses for products.

Brainstorming differs from other idea generating techniques mainly in strict adherence to a set of rules. These rules as practiced by Batten, Barton, Durstine and Osborne are as follows:

1. Don't criticize. Evaluation or judicial thinking should come later.
2. Encourage free wheeling. The more imagination the better. No idea is too wild or remote.
3. Get as many ideas as possible. Good ideas evolve from quantity. Members will keep up with a pace setter.
4. Combine and improve. Ideas become more concrete by association with other ones. "Hitch-hiking" is encouraged.

All attitudes and conditions, therefore, must be positive.

Advertising agencies, then, are strong proponents of group thinking. The slogan "Soup on the Rocks," and the eighteen ways of promoting colored telephones are some results of these buzz sessions. In this respect one advertising trade journal conducts a continuous brainstorming session on how advertising agencies can improve their idea output.[8]

Characteristics of Creative Ability

There is little agreement among psychologists as to the definition of creative ability. There is more agreement, however, as to the characteristics associated with creativity.[9] They are as follows:

1. Problem sensitivity. The ability to recognize a problem.
2. Idea fluency. The piling up of a number of alternative solutions.
3. Flexibility. The development of a variety of approaches.
4. Originality. The derivation of new ideas, or at least new to the individual.

Many organizations are now employing creativity directors in order to stimulate and to utilize the creative abilities of all employees.

A pilot study of what creative men say about their own thought processes illustrates the conditions of creativity.[10] Most of the respondents thought they could do their best work under given physical conditions, by outlining the problem, by revising and improving on ideas after acceptance, by preparation for the process by reading nonrelated matter, and by continuous effort.

---

[6]Alex F. Osborn, **Applied Imagination,** Charles Scribner's Sons, New York, 1953, Chapter 10.

[7]"Stuck for Sales? Then Try Brainstorming," **Industrial Marketing,** November, 1956, p. 156.

[8]———, "How Advertising Agencies Can Boast Their Idea Output," **Industrial Marketing,** January 1957, pp. 59-60.

[9]"Practical Techniques in Creative Thinking," **Management Review,** March, 1956, p. 207.

[10]Herbert True, "How To Be Creative." **Printers Ink,** January 4, 1957.

Psychological Climate

The technique of brainstorming is becoming widely accepted. General Electric, General Motors, Standard Press Steel, R.C.A., U. S. Steel, colleges, and the Air Force are among those now having creative thinking courses. General Electric has had a creative engineering program since 1937. The Air Force uses brainstorming in its ROTC courses. Colleges and universities have formal or industry extension courses.

Planning Education

Temple University presents an interesting illustration of utilizing the creativeness of its faculty-administrative personnel in planning for the increase in student enrollment in the future. The college student body in the United States has shown continuous growth since 1870, at which time there was an enrollment of 42,286 students. Enrollment increased to 2,755,000 in 1955, and is expected to rise to 4,368,756 in 1970-1971.[11]

The Temple University Conference took place at Atlantic City during a recent recess under conditions conducive to stimulating the creativity of everyone. Problem areas were first defined and then were discussed by small groups. After discussion or free association of ideas, the groups prepared drafts of their recommendations.

Such topics as entrance requirements, teaching load, promotion, teacher recruitment, future faculty needs, junior colleges, evening schools, and physical plant were discussed. As a result of this series of conferences, the University administration will be better prepared to meet the problems that will certainly arise as enrollments expand; and a short-run awareness of the problem itself was achieved by all participants.

Case Study Method

The creative imagination of many college students remains relatively dormant or untapped. Courses in which the student is required to memorize principles and facts do little to stimulate creativity. A student, especially in the advanced courses, should be taught how to apply principles and facts to the solutions of problems.

The case study, the second of the technqiues of creative thinking to be discussed, stimulates creativity by requiring students to develop ideas through induction, deduction, or by perceiving interrelationships of subjects.

One technique that stimulates and guides creativity of the foregoing nature is as follows:

Preparation and Analysis

Divide the case into four parts: A, B, C, D.[12]

Part A includes factors and characteristics. Outline the pertinent facts about the company, giving the products manufactured, the class or classes of buyers to whom it is sold, the channels of distribution used, the selling program, and other information that will give a picture of the company and its problems.

Part B defines the problem. Its purpose is to assure that there is a "meeting of the minds" among the participants as to the problem or subproblems to be studied.

Part C presents the decision. Herein is the presentation of the conclusion. The students are urged to deliberate and revise content and substance as information, data, or better logic results from work with the problem, making this section indeed the last to be prepared.

Part D presents the analysis upon which the conclusion was based. This is the most important part of the study. In it the analyst must detail the data and information and the methods of use which support his decision. He must determine the assumptions required and the reasons for their use. All necessary exhibits or studies should also be presented either here or in an appendix. Finally one should be sure that the re-

[11]Benjamin Fine, "Education in Review," **New York Times**, April 28, 1957.

[12]Developed by the writer for his course in **Industrial Marketing.**

port is reasoned, that is, that disadvantages as well as advantages of each course of action are cited. All data should be documented fully.

The student should now be ready to defend his course of action before the class. Since questions are creative acts of intelligence, an improved course of action often evolves through combination and association of ideas through group participation.

Relationships

The forced relationship technique is used by many copy writers.[13] Here the individual will take two objects or topics and attempt to think out all of the possible relationships between the two. Cafeterias and supermarkets, or a portable TV set and portable sewing machine would be examples. The result is the multiplication of ideas which may be developed into copy and sales promotion pieces by such association of ideas. All evaluation or criticism should be reserved until one has thought of as many relationships as possible.

Operations

William Gordon of Arthur Little, Inc., management consultants, has developed a technique of utilizing creativity known as free association.[14] Conference members are encouraged to talk freely about a topic cited by the leader. No one except the conference leader knows how the problem is defined. Through the process of associating ideas, panel members eventually define the problem. All seek one answer to the problem. The conference leader, for example, may cite his dissatisfaction with services rendered by wholesalers. A member in association with others may talk about direct marketing. Soon the problem is defined as one involving the selection of a new channel of distribution. Again, one answer is sought. As with other group thinking approaches, a prerequisite of success is to have a good conference leader.

EVALUATION

Management should have check lists or methods to aid in evaluating ideas or thoughts in these conferences that postpone criticism. The scientific method should be used as a guide for evaluation wherever possible. Dr. Conant said that science is that portion of accumulated knowledge in which new concepts are continuously being developed from experiment and observation.[15] From empirical knowledge, then, one has the framework from which to evaluate. Some methods which aid evaluation, in part, follow.

Product Check List

A committee, for example, might be appointed to appraise the new product ideas which have been developed by a previous brainstorming session. A marketing check list to help introduce a new product serves to guide judgment by the committee. This check list, therefore, tends to lower the mortality rate—eight out of ten new products fail. Some key items in the marketing check list are as follows:

1. Is the new product salable? Pretest the product, check market potentials.
2. How will the product be distributed? Are the factors that favor direct sale, or use of wholesale middlemen known?
3. What is the "share of market" of the competition? List advantages and disadvantages of competitors' products and services.
4. How will price be determined? The pros and cons of a one-price policy and discount policies should be analyzed.
5. What selling program has been prepared? Personal selling, advertising and sales promotion requirements should be analyzed.[16]

[13]James E. Gates, "Applied Imagination and Creative Thinking," **Georgia Business**, The Bureau of Business Research, The University of Georgia, September, 1956, p. 5.

[14]**Management Review, op. cit., p. 208.**

[15]Osborn, **op. cit.**, p. 19.

[16]For other checks see, Richard Mansville and Joseph Ungar, "Marketing Checklist For New Products," **Printers Ink**, February 1, 1957.

Research Check Lists

Any ideas relevant to marketing research should also be subject to the scientific method of investigation. The following, in brief, should be considered.

1. The problem must be defined. It should be made concrete, or alternatives cited.
2. Primary and secondary sources of information should be checked.
3. Accepted sample design should be used. Probability sampling, for example, may be applicable.
4. Tests of phraseology in questionnaire design should be made.
5. Interviewer bias should be minimized by better selection and training.[17]

One of the above areas that is somewhat difficult to evaluate is personal interviewing. Some of the difficulties of interviewing and a relatively new method of conducting such contacts follow.

Creative Interviewing

It is very difficult to determine the buying intentions of consumers. Interview results may show preferences for a given brand of a product. Two months later the consumer may purchase another product brand. The consumer's actual behavior and the propensity to spend are very difficult to predict.[18]

To be creative, research must be predictive. Therefore, one should study the reactions of consumers. This means that the interviewer should create conditions parallel to those under which a person buys. The reactions of the consumer to such stimuli are continuously being observed.[19]

Utilizing Creativity

Of the techniques of creative thinking, brainstorming is the most widely accepted because everyone can contribute his ideas. Organizations should, therefore, utilize one of the techniques of creative thinking as a means of tapping mental resources. Conditions which eliminate emotional blocks are essential since repressed emotions stifle creativity. In terms of Freudian psychology, allow the ego, the conscious part of the mind capable of intellectual development and rational judgment, to employ the libido, the fund of energy upon which the mind draws, to work toward greater productivity of ideas. Directors of creative thinking must have the skill to stimulate and guide the efforts of people in this direction.

The case study does much to stimulate creativity through preparation and analysis if the technique cited is carefully used. The forced relationship and the Gordon techniques also serve to utilize idea resources.

Evaluation is essential in all of these processes. The best guide to evaluation is empirical judgment which requires adherence to the scientific approach.

---

[17]Additional information can be found in **Market and Marketing Analysis,** Myron S. Heidingsfield and Albert Blankenship, Henry Holt and Company, New York, 1957.

[18]Arthur Burns, "The Instability of Consumer Spending," National Bureau of Economic Research, **Annual Report,** 1952.

[19]A. Politz, "Science and Truth in Marketing Research," **Harvard Business Review,** January-February, 1957, p. 119.

Philadelphia Business Index

The September 1950 issue of the Bulletin presented a new index of general business conditions in the City of Philadelphia. This series, prepared and since maintained by Robert T. Kline, was designed to reflect economic activity exclusively within the boundaries of the City of Philadelphia. It was originally based upon a combination of statistical data representing (1) industrial electric power sales; (2) indexes of employment and employee-hours; (3) department store sales[1]; (4) bank debits[2]; and (5) total construction. Because the method of reporting certain data is under revision by the originating agencies, the change in average weekly hours worked and the monthly change in total employment in the Philadelphia metropolitan area, both prepared by the Department of Research of the Federal Reserve Bank of Philadelphia, have been substituted for (2) above. This is a temporary expedient to maintain continuity of the index. The original data series will be restored after revision.

The following table presents the index for the years 1939 through 1956 and by month from May, 1956.[3]

Index of General Business Conditions, City of Philadelphia, 1947=100

Year	Index	Month	Index
1939	73	1956	
1940	77	May	129.7
1941	96	June	127.6
1942	99	July	129.1
1943	106	Aug.	131.0
1944	106	Sept.	133.7
1945	98	Oct.	128.7
1946	100	Nov.	126.0
1947	100	Dec.	125.0
1948	103	1957	
1949	97	Jan.	124.3
1950	108	Feb.	125.0
1951	111	Mar.	124.0
1952	111	Apr.	124.3p
1953	119	May	125.0e
1954	119		
1955	124		
1956	128		

p=preliminary
e=estimated. Based on currently published weekly indicators.

[1]The revised index of Department Store Sales, published by the Federal Reserve Bank of Philadelphia, has been used in the composite index since October, 1951.

[2]The revised Wholesale Price Index, all commodities, published by the BLS, is used beginning January, 1952 as a deflationary index for the Bank Debit Series.

[3]Kline, Robert T., "A Measurement of General Business Conditions in the City of Philadelphia." **Economics and Business Bulletin,** Temple University School of Business and Public Administration, Philadelphia, Pa., September, 1950, pp. 33-40.

ECONOMICS AND BUSINESS BULLETIN[1]

CHRONOLOGICAL INDEX[2]

VOLUME 9

Ref. No.	Author	Article	Pages
	Vol. 9, No. 1		
96	McKenna, William J.	The 1956 Presidential Election—The Issues and the Campaign	3-16
97	Buckwalter, W. Roy	Employee-Employer Relations at the Plant Level	17-29
98	Howe, W. A.	Index Numbers and Ratios	30-35
	Vol. 9, No. 2		
99	Adams, John F., Hackman, Roy B., James, Rosella, Wilson, Samuel M., and others	The Philadelphia Area Older Worker Study—A Summary	3-56
	Vol. 9, No. 3		
100	Heidingsfield, Myron S.	The Impact of Trading Stamps on the Philadelphia Market	3-6
101	Mullen, James H.	The Attitude Survey in Industrial Relations	7-20
102	Moore, Willard	Drama in Reports	21-26
	Vol. 9, No. 4		
103	McKenna, William J.	The 1956 Elections: Retrospect and Prospect	3-10
104	Mullen, James H.	Attitude Survey Methodology in Industrial Relations	11-29
105	Reilly, Clair James	Creative Thinking: Practical Techniques and Evaluation Methods	30-34

INDEX OF AUTHORS[3]

Adams, John F. 99
Buckwalter, W. Roy 97
Hackman, Roy B. 99
Heidingsfield, Myron S. 100
Howe, W. A. 98
James, Rosella 99
McKenna, William J. 96, 103
Moore, Willard 102
Mullen, James H. 101, 104
Reilly, Clair James 105
Wilson, Samuel M. 99

SUBJECT INDEX[3]

Accounting 98
Business Administration—
97, 98, 99, 101, 102, 104, 105
Economics 98, 99, 100
Finance 98
General 96, 99, 105
Industrial Relations 97, 99, 101, 104
Management 97, 98, 99, 101, 102, 104, 105
Marketing 100
Philadelphia 99, 100
Political Science 96, 103

---

[1] See Volume 7, No. 1, for Index to Volumes 1-6, inclusively, and No. 4 of each of Volumes 7 and 8 for the indexes to the respective volumes.

[2] **The Philadelphia Business Index** is maintained by Robert T. Kline and appears as a regular feature in each issue.

[3] Reference numbers may be found in the Chronological Index.